

The influence of Technology on Student Teacher's Literacy Skills Acquisition in Colleges of Education in Plateau State, Nigeria

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Abstract

This study was conducted to examine the influence of technology on the ECCE student teacher's literacy skills acquisition. The study adopted a descriptive survey research design. Two research questions guided the study. The population of the study comprises all childhood education NCE 3 students in Federal College of Education, Pankshin, and College of Education, Gindiri, with a total number of 128 students, all in Plateau State, Nigeria. A simple random sampling techniques was used for the study, a sample size of fifty (50) students drawn from both colleges were randomly sampled for the study. Two Instruments titled "Causes and Impact of Technology on Poor Literacy Skills (CIPLS)" and "Strategies to Improve Student Teacher's Literacy Skills Acquisition through Mobile Apps (SISTLSAMA)" were used to obtain data for the study. The instruments were subjected to face validity by three experts, and reliability coefficient of 0.81 and 0.87 were obtained using Kuder-Richardson (K-R₁) method. Mean and standard deviation were used to answer the research questions. The findings of the study revealed among others that ECCE student teachers have reading and spelling difficulties as many of them are more acquainted with internet and Facebook slangs and jargons. The paper concluded by recommending that professional teachers should adopt teaching methods that enhance literacy acquisition such as reading comprehension and responses, and spelling dictation in the class and incorporate the use of mobile Apps in teaching and learning for the student teachers.

Keywords: Technology, Student Teachers, Literacy, Skills Acquisition, Colleges of Education

Introduction

Literacy skill can be seen as the ability to read, write, speak and listen in a way that lets one communicate effectively and make sense to the world. However, understanding the significance of literacy goes far beyond its definition. Literacy is essential. Dasman (2021), without literacy, it is hard to live the life one desires just as it is hard to fall behind when having a tough start in life. From earliest years, literacy skills help one develop and communicate. At school, having the literacy skills to read, write, speak and listen are vital for success. Anyone that finds these skills hard, have to struggle to learn. It affects one's confidence and self-esteem.

As a student-teacher, one would without these skills find it very difficult to navigate through education and everyday life activities. Without these skills, activities such as effective use of the internet, filling out forms and interpreting instructions on any given task including the ability to communicate effectively would be difficult for such a student-teacher. Acquisition of these skills starts from early childhood education.

To understand well the merits of this discourse it is pertinent to take a look at how various people see early childhood. Professionals in the discipline see the pre-school years as a corner stone of learning. Parents view the pre-school years as the time children "get ready" to enter kindergarten or first grade, and begin "formal" schooling. Others still think of pre-school years, the years from three to five, as a time when children should be unburdened of learning, and allowed to play and enjoy life. For many children though, the pre-school years are the beginning of a critical period spanning through fourteen years during which their lives will be dramatically influenced by teachers and schooling.

PRESCHOOL: the traditional use of the term pre-school years to describe the period before children enter school is rapidly becoming absolute. Today, it is common for many children to be in a school of some kind beginning as early as age two or three, and childcare centres beginning from six weeks becoming de rigueur for children of working parents. Many states, including Plateau state have public preschool programs for three year olds. The term preschool hardly applies to threes and fours anymore. For the purpose of this study, preschools are

programs for zero – five year old children, before primary school level, therefore, it is pertinent to know "Who and How" are involved in their pedagogies. "Who" is for who are caregivers/teachers? The early childhood professionals? while "how" is how their pedagogies take place? According to Federal Republic of Nigeria (FRN:2013) in her National Policy on Education [(NPE), the preschool also called Early Child Care and Development Education (ECCDE) is segmented for ages 0-4 years, situated in daycare or crèche; it is the stage or level where care, protection, stimulation and learning are promoted in children.

The purpose of early child care development and education shall be to:

- Prepare the child for the primary level of education;
- Inculcate in the child the spirit of enquiry and creativity through the exploration of nature, the environment, art, music and the use of toys, etc.;
- Teach the rudiments of numbers, letters, colors, shapes, forms, etc., through play among others.

Having known the goals and purpose of preschool, the "Who" that carries out the pedagogy becomes very pertinent in order to achieve the goals. An ECCE professional is at least someone who has successfully completed an associate degree from a program conforming to National Associate for the Education of Young Children (NAEYC) guidelines; OR someone who has had a successful completion of an associate degree in a related field, 30 units of professional studies in early childhood development including 300 hours of supervised teaching experience in an early childhood programs (Morrison, 2020). The above qualifications that one needs to acquire in order to become a professional in ECCE are same with the Nigerian Certificate in Education (NCE) that our student teachers are getting, therefore, they are ECCE professionals who are qualified to teach in ECCDE centers.

However, the student teachers' basic literacy skills levels are very important in order to carry out the teaching job effectively. Literacy is the ability to read and write. Kapur (2019) is of the view that basic literacy skills are referred to the skills of reading, writing and arithmetic. The author stated that it is vital for the individual to possess these skills, to carry out various tasks and activities and sustain their living conditions in an appropriate manner.

Basic literacy skills are regarded as an indispensable component of human resources development. It is fundamental to not only growth and development of human resources, but also to lead to social and economic progress of the nation, Rintaningrum, R. (2021). Unfortunately, the level of literacy skills of the student teachers in the college of education are very poor and inadequate to be called teachers. The student teachers under this study are NCE three ECCE students of Federal College of Education Pankshin and College of Education Gindiri both in Plateau State who are about graduating as professional teaches, yet these sets of students find it very difficult to read and write appropriately. It is very unfortunate that these are same people to be called ECCE professionals who would teach the little children of the society. The level of literacy of these student teachers appear so poor that some of them cannot write a correct sentence. However, with the aid of technology (Android phones, computer operators among other mobile apps) they are able to write their final research work (project) which enables them to graduate especially in institutions where plagiarism tests are not used. Another debilitating factor is the issue of result moderation which is usually tilted towards ensuring that almost every student scales through every examination no matter how badly he performs.

Technology is the application of scientific knowledge for practical purposes or applications. Technology uses scientific principles, and applies them to change the environment in which humans live. Technology can also use scientific principles to advance industry or other human constructions. According to the Pattern (2021) "Technology is the science of making machines that can think like humans. It can do things that are considered smart". The author affirms that technology can process large amounts of data in ways, unlike humans. The goal for technology is to be able to do things such as recognize patterns, make decisions, and judge like humans. It is sad to say that some of would be teachers are taking negative advantage of technology to do their thinking and activities for them. Technology appears to be replacing the human in their brains as they no longer study to learn simple correct spellings of words or write correct sentences as professional in order to be called teachers.

Conversely, colleges of education in Nigeria have long been recognized as vital institutions for higher education and the development of the country's intellectual capital for teachers. However, recent research have revealed that despite the significant efforts made by lecturers in teaching and learning processes, there are concerns about the overall academic outcome of student teachers in Nigerian colleges of education. Some factors such as passing centers, overcrowded classrooms, absent of aptitude tests in the colleges before

admission of the students, abuse of moderation of results, and the recent abuse of technology by the students have militated against students' performances in school. These factors have watered down the efforts of lecturers and learning outcome of the student teachers. However, Iro (2023) has attested that "one crucial factor that has identified as a potential determinant of academic success is students attitude towards learning". In accordance, Cohen (2020) opined that attitudes encompass various aspects, including student's motivation, engagement and commitment to their studies. In conformity with the above affirmations, the lecturers, the overcrowded classrooms and the technology are not hindrance to the student teachers literacy skills acquisition, rather the attitudes of the student teachers towards learning.

Furthermore research conducted by Mohammed and Ibrahim (2023) emphasized that the role of self-efficacy beliefs in shaping students attitudes towards learning and subsequently influencing their academic achievement. A student teacher who understands that he/she is studying to become a professional or would one day stand as educationist must know that his/her literacy skills acquisition is paramount. Salido (2023) found out that there are already several technological organization that provide students with Automatic Essay Writing (AEW) tools and that "these AEW programs, which may automatically write individual paragraphs or full essays in response to a prompt such as an essay topic, have become increasingly popular in recent years." The author stated that "Even though the writing that is currently being generated by AEW can be difficult to tell whether the content being generated was written by an algorithm or human student at times." Unfortunately, that is the current situation of majority of ECCE student teachers under this study. To attest to this facts, some samples of class assessments and home assignments are hereby presented (See the Appendix).

Statement of Problem

Education being a light to life cannot be jeopardized at this 21st century. Childhood education is a foundational stage that leads other educational levels. Therefore, anyone preparing to teach at this level must be competent and well equipped with literacy skills. Thus, the Early Childhood Care and Education (ECCE) student teachers in colleges of education must be trained to be competent to defend the certificates they earn after graduation. Unfortunately, majority of the student teachers do not usually meet the expectation due to the very poor literacy skills acquisition they had. These include inability to:

- Speak correctly
- read correctly
- spell words correctly
- write correctly and constructively.

These menace must be arrested in order to have sound educational system from our childhood level of education because the competence of a teacher means a lot to teaching and learning of a child. This type of ugly scenario cannot support the achievement of the goals and objective of collages of education as it is stated by Salem University Nigeria (SU: 2021) that colleges of education are in consonance with the realization of national needs and aspirations vis-à-vis personal and national development. The graduates must, therefore be resourceful, creative, knowledgeable and able to perform professionally mastery of problem solving skills and to enhance commitment to the teaching profession among others. The researcher is therefore worried at the poor literacy skills acquisition of our student teachers who graduate as professional teachers; hence want to determine the influence of technology on ECCE student teachers literacy skills acquisition in colleges of education in Plateau state, Nigeria.

Purposes of the Study

The study aimed to investigate the predicate power of technology on the student teacher's literacy skills acquisition, and also aiming to shed light on the factors that contribute to the student's literacy skills acquisition through the technology in colleges of education in Plateau State, Nigeria.

Specifically; the study sought to:

- identify causes of poor literacy skills acquisition among ECCE students teachers in colleges of education.
- identify some strategies to improve ECCE student teacher's literacy skills acquisition through technology apps such as Whatsapp.

Research Questions

The following research questions were answered to guide the studies:

- What are the causes for poor literacy skills acquisition among ECCE student teachers in colleges of education?
- What are some strategies to improve student teacher's literacy skills through technology like Whatsapp?

Methodology

The study was carried out in Plateau State, Nigeria. Two research questions were used. The population of the study comprised all ECCE NCE 3 student teachers from FCE Pankshin and College of Education Gindiri with a total number of 165 student teachers which were randomly selected. The researcher developed a structured questioner as data collecting instrument. The Two Instruments titled "Causes and Impact of Technology on Poor Literacy Skills (CIPLS)" and "Strategies to Improve Student Teacher's Literacy Skills Acquisition through Mobile Apps (SISTLSAMA)" were used to obtain data for the study. The instruments were subjected to face validity by three experts, and reliability coefficient of 0.81 and 0.87 were obtained using Kuder-Richardson (K-R₂) method. Mean and standard deviation were used to answer the research questions which consisted two clusters with 30 items which were designed to capture the variable under study. The structured questioner were on four pointlikert-scale responses valid as Strongly Agreed (SA), Agreed (A), Strongly Disagree (SA), and Disagreed (D).

S/N	Item Statement	SA	A	D	SD	Mean	Decision Point
1	Lack of proper literacy foundation from their basic educational level	36	10	3	-	3.67	A
2	Inadequate opportunities to practice literacy skills in the school system	23	24	2	-	3.43	A
3	Insufficient literacy skill acquisition resources and learning materials	35	12	2	-	3.67	A
4	Student low self-esteem hinders their acquisition of literacy skills	29	19	1	-	3.57	A
5	Students' language barriers and cultural differences	23	20	4	-	3.40	A
6	Lack of motivation from parents	18	22	6	3	3.12	A
7	New innovation in technology and its application is hindering effective literacy skills acquisition	20	15	7	3	3.22	A
8	Constant use of shorthand writing style reduces effective literacy skill acquisition	25	20	3	-	3.46	A
9	Phobia for learning	16	26	4	2	3.17	A
10	Lack of concentration from the part of students	25	20	2	1	3.44	A
Cluster Mean						3.74	A

The instrument was face validated by experts, two from Childhood Care Education department and one from Measurement and Evaluation department all from University of Jos, Plateau State. The reliability test was measured using internal consistency through Cronbach Alpha technique, and it yielded reliability indices of 0.84. In analyzing the data, mean was used to answer the research questions.

Results

Research Question 1

What are the causes of poor literacy skills acquisition among ECCE student teachers?

Table 1. Mean score on the responses on the causes of poor literacy skills acquisition among ECCE student teachers.

Table one above revealed the mean rating of responses on the causes of poor literacy skills acquisition among ECCE student teachers. The research of the above items was focal on two institutions which are federal college of education Pankshin and college of education Gindiri. Item 1-10 of the research met the standard mean score of 3.67 and above which indicate acceptance by respondents. In the analysis conducted, it was found that the cluster mean score for the both colleges was 3.74. This score represents the average value derived from the variables considered within the colleges.

Research Question 2

What are the strategies to improve ECCE student teachers' literacy skills acquisition through mobile Apps such as WhatsApp?

Table 2. Showing Mean Score on responses on some of the strategies to improve ECCE student teachers' literacy skills acquisition through mobile Apps such as WhatsApp.

S/N	Item Statement	SA	A	D	SD	Mean	Decision Point
1	Provides personalized reading instruction tailored to the students' interest and level	35	11	1	3	3.56	A
2	Provision of virtual instruction that provide real-time feedback reading guidance	18	31	1	-	3.34	A
3	Speech recognition tools to improve pronunciation, fluency and comprehension	30	16	3	1	3.50	A
4	The use of technology-based adaptive assessment that match individual to identify strength and weakness	14	30	6	-	3.16	A
5	Collaborative reading aloud learning platforms among the student through technology	32	14	4	-	3.56	A
6	Gamification and simulation	16	26	7	-	3.18	A
7	Natural language processing	23	18	8	1	3.26	A
8	By analyzing and providing feedback on writing and reading comprehension	26	20	2	1	3.45	A
9	Decreased teachers' engagement	17	16	16	-	3.02	A
10	Ineffective instruction	14	23	10	-	3.09	A
11	Limited feedback	29	10	8	1	3.40	A
12	Increased motivation and enjoyment	17	27	5	-	3.24	A
13	By offering group instruction	25	13	8	1	3.32	A
14	To connect students and teachers for collaborative learning	27	11	6	1	3.42	A
15	By suggesting relevant resources tailored to individual needs	31	14	5	-	3.52	A

16	Improved instructional effectiveness	24	17	6	3	3.24	A
17	By incorporating diverse media to engage students	23	21	4	1	3.35	A
18	By limiting instruction to text only	14	25	10	-	3.08	V
19	To track students' progress and inform instruction	17	20	12	-	3.10	A
20	Confer with students individually during independent reading time	27	17	5	1	3.40	A
Cluster Mean						3.30	A

Table two shows the mean rating of responses on some of the strategies to improve ECCE student teachers' literacy skills acquisition through mobile Apps such as WhatsApp. The above listed 30 items were accepted by the respondents as it met the criterion mean value of 2.50 and beyond. The research study was carried out in the two colleges of education, and the findings were positively received by the respondents. The cluster means scores from the analysis were 3.56, as the 50 respondents were randomly sampled from both colleges. These score represents the average value derived from the variables studied within each institution and the cluster mean was 3.30 which is very high and indicating that with the right use of technology the literacy skill acquisition of the ECCE student teachers can be improved.

Discussion of Findings

The findings of the study revealed the causes of poor literacy skills acquisition among ECCE student teachers such as lack of proper literacy foundation from their basic educational level and lack of motivation from parents which is indisputable because that is where foundation of education lies. The above mentioned are very big factors that can hinder learning especially that of literacy acquisition because the basic foundation which is early childhood education starts from nursery school to primary school educational levels. The findings above are in line with a study conducted by Olisaeke (2023) who posited that from birth to age two is the most rapid period of brain development with brain cells forming at the rate of more than one million cells per second. The author stated that positive early childhood education experiences and home environment support brain cell connections, while the brain left dormant hinders connection. This can only be achieved at early stage of life of an individual starting from home where the parents are the first teachers of a child and also taking the child to early childhood education centers where the child acquires almost all the developmental domain skills that spurs learning.

The finding further revealed that factors such as inadequate opportunities to practice literacy skills in the school system, insufficient literacy skill acquisition resources and learning materials, student's low self-esteem hinders their acquisition of literacy skills. Students' language barriers and cultural differences, new innovation in technology and its application are hindering effective literacy skills acquisition. Constant use of shorthand writing style reduces effective literacy skill acquisition and phobia for learning. These factors listed above as identified through the findings of this study are attitudinal, thus, having direct influence on the students' acquisition of literacy skills. This is in agreement with the study carried out by Rohani, Rahil, Habibah, Wong, Ahmad and Ayuba (2022). The authors stated that Students achievement problems are often highlighted in academic literature and the mass media and therefore, it is pertinent for educators to be aware and to study the factors related to student achievements such as naches and attitude towards learning. The authors further affirmed that motivation is the driving force behind someone's actions and affects the person's needs, desires and life in general. Same applies to students success in learning. Rohani, Rahil et al made the above affirmation in a study they carried out titled "Learning and Study Strategies Inventory (LASSI)" where they discovered that motivation and attitude were the best predictors of student academic performance. Hence, the student teachers can achieve their high acquisition of literacy through positive attitudes towards learning.

The findings of the study also revealed that through appropriate incorporation and use of technology in teaching and learning of literacy skills, the student teachers will acquire literacy skills easily since they are acquainted with mobile apps.

Conclusion

In conclusion, the study highlighted the significant roles that literacy skill acquisition play in shaping students educational outcomes. The findings underscore the importance of fostering positive attitudes toward learning among student teachers. Promoting self-efficiency beliefs, nurturing a supportive learning environment through technology such as mobile apps, tailoring teaching methods and encouraging collaboration between educators and student teachers. This will go a long way to produce quality and competent teachers who are in turn teach in early childhood educational level. That is how our educational system in Nigeria can be improved for sustainable development in education and that of Nations economic development.

Recommendations

Based on the findings the following recommendations were made:

- Factors such as passing centers, overcrowded classrooms, absence of aptitude tests before admission of the students, abuse of moderation of results have negated acceleration of literacy skills acquisition and therefore should be handled with utmost attention by the management of every college of education in Nigeria.
- There should be incorporation of diverse media to engage students in teaching and learning in our colleges of education in Nigeria
- Provision of personalized reading instruction tailored to the students' interest and level, provision of virtual instruction that provide real-time feedback reading guidance, speech recognition tools to improve pronunciation, fluency and comprehension, The use of technology-based adaptive assessment that match individual to identify strength and weakness and collaborative reading aloud learning platforms among the students through technology should be incorporated into teaching and learning by the lecturers in order to improve students learning outcome.

References

- Cohen, J. (2020). Role of academic support services in improving students' learning attitude.
- Dasman, F. (2021). Literacy: Its importance and changes in the concept and definition. *Teflin*, 20(2009), 78.
(Note: The publication year seems incorrect; please verify)
- Federal Republic of Nigeria (FRN). (2013). National policy on education (6th ed.). Early Childcare Development and Education (ECCDE). NERDC Publisher. *International Journal of Higher Education*, 32(1), 67-89.
- Iro, S. U. (2023). Impact of students' learning attitudes on academic performance in Nigeria public universities. *Journal of Educational Foundation (JEF)*, 12(2), 23-33.
- Kapur, R. (2019). Significance of basic literacy skills. ResearchGate.
- Main, P. (2023). AI in early childhood education: A comprehensive handbook. Illumine App. Mohammed, A., & Ibrahim, A. (2023). Enhancing learning attitudes through academic support services: A case study of Nigerian public universities. *International Journal of Higher Education*, 27(3), 210-225.
- Morrison, G. S. (2020). Definition of early childhood education. In *Early childhood education today* (pp. 1-10). Pearson Education.
- Olisaeke, L. C. (2023). Influence of early schooling on pupils' academic achievement in primary schools. *Journal of Educational Foundations*, 12(2), 145-151.
- Pattam, A. (2021). Artificial intelligence, defined in simple terms. HCL Technologies. [https://www.google.com/search?q=Pattam%2C+A.+\(2021\).+Artificial+intelligence%2C+defined+in+simple+terms.+HCL+Technologies.&rlz=1C1BNSD_enNG1084NG1084&oq=Pattam%2C+A.+\(2021\).+Artificial+intelligence%2C+defined+in+simple+terms.+HCL+Technologies.&gs_lcrp=EgZjaHJvbWUyBggAEEUYOdIBCTIyNjcwajBqN6gCCLACAfEFVX0cZ_XXso0&sourceid=chrome&ie=UTF-8](https://www.google.com/search?q=Pattam%2C+A.+(2021).+Artificial+intelligence%2C+defined+in+simple+terms.+HCL+Technologies.&rlz=1C1BNSD_enNG1084NG1084&oq=Pattam%2C+A.+(2021).+Artificial+intelligence%2C+defined+in+simple+terms.+HCL+Technologies.&gs_lcrp=EgZjaHJvbWUyBggAEEUYOdIBCTIyNjcwajBqN6gCCLACAfEFVX0cZ_XXso0&sourceid=chrome&ie=UTF-8)

- Rintaningrum, R. (2021). Do absence and mobility (transience) affect reading literacy achievement? *Jurnal Sosial Humaniora*, 8(1), 135.
- Rohani Ahmad Tarmizia et al. (2022). The effect of attitude on student achievement. *ScienceDirect*.
- Salem University Nigeria. (2021). College of Education aims and objectives. Salem University Nigeria.
- Salido, V. (2023). Impact of AI-powered learning tools on student understanding and academic performance. *Research Gate*.